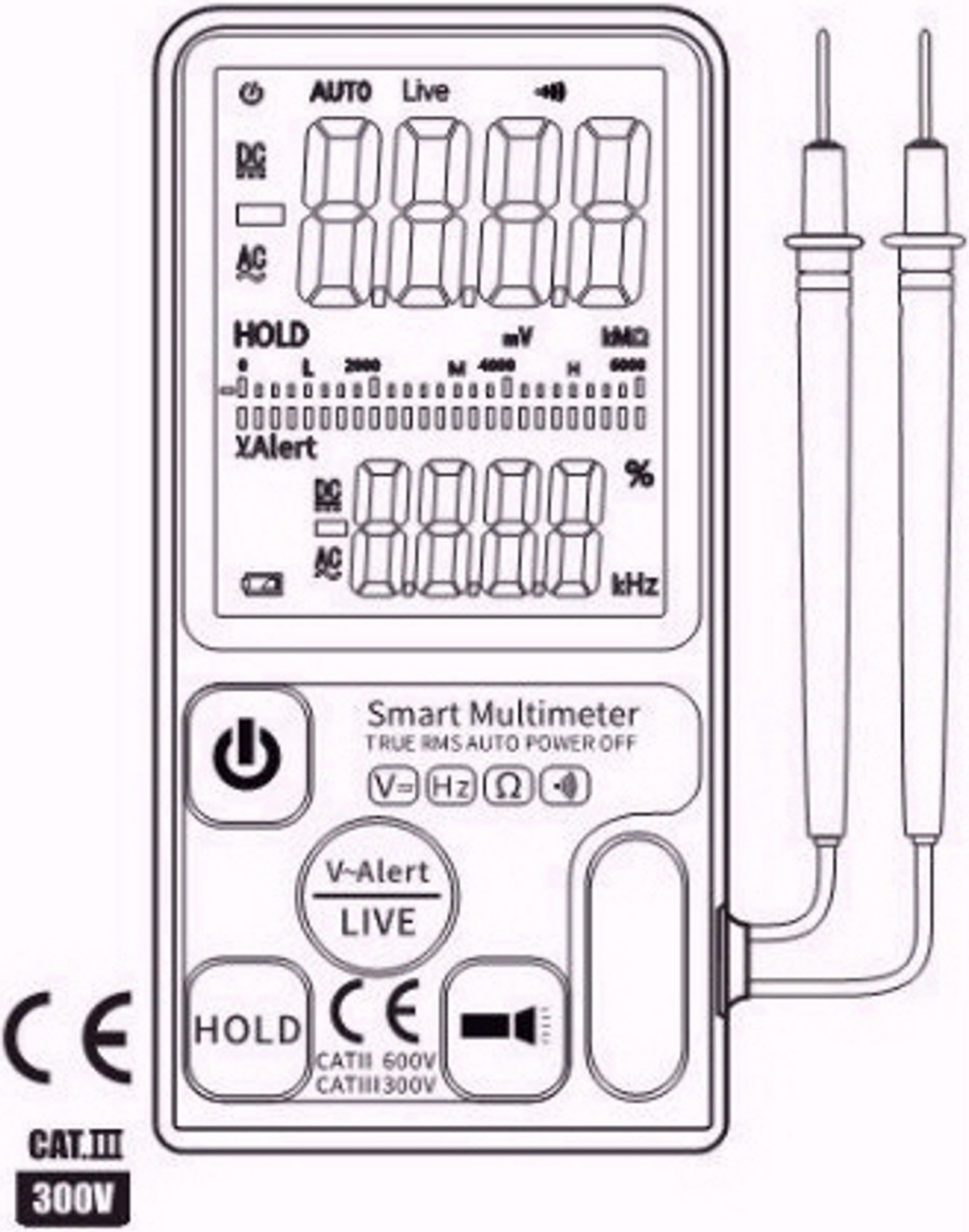
SMART MULTIMETER



1. Security Information

⚠ Warming

People who use this meter should pay special attention to it , because the improper use might cause electric shock or damage to the meter. Please follow the actual safety rules and safety measures as specified in the manual.
To fully use the function of this meter and ensure its safety operation,please read and follow its usage methods in the specification carefully.

This meter matched the technical requirement of digital multimeter GB/T 13978-92 and the safety requirement of electronic measuring meter GB4793.1-1995 (IEC-61010-1. It belongs to secondary pollution and its over-voltage standard is CAT II 600V.
Please follow the safe operation guide and ensure safe use for this meter.
Proper use and maintenance for meter will give you a satisfied service.

1.1 Preparation
1. Users must follow the standard safety rules when using it :
- Need some universal protection to avoid electric shock.
- To avoid misuse the meter.
2. Check if there is any damage on this meter or not in the process of transportation when received it.
3. Check if there is any damage on this meter or not when preserved,loaded and delivered it in poor condition.
4. The test lead must be in a good condition.Check whether there is any damage on its insulation or not and if meter' s metal wire is exposed or not before using it.

1.2 Usage
1. The correct function and measuring range must be guaranteed when using it.
2. Don' t overtake the indicating value of protection extent of everymeasuring range when testing.
3. Don' t touch the top of test lead (the metal part) when linked meter with measuring circuit.
4. When testing, if the voltage tested is over 60V DC or 30V AC (RMS),please keep your fingers behind the test lead protector.
5. When the measuring terminal voltage is over 600V DC or 600V AC, please stop testing voltage.
6. Before turning the switch to change the testing function, the test lead should be removed from the measuring circuit.
7. Do not measure resistance, capacitance, diodes and lines when the line is energized.
8. When use current,resistance,capacitor,diode and circuit breaker,user should avoid to link meter with voltage source.
9. Don't test capacitance before the capacitor is fully discharged.
10. Don't use the meter under the explosive gas, steam or dust environment.
11. If there is any abnormality or malfunction in the meter, user should stop using it.
12. Multimeter should not be used unless the meter bottom shell and the battery cover are completely clasped in place.
13. Don't preserve or use meter in the condition of direct sunlight, high temperature, high humidity.

Marks

▣ Double insulation protection. (II Level)

CAT II In accordance with the IEC-61010-1 standard over-voltage (installation) level II,pollution level 2,CAT II means the level of pulse withstand voltage protection provided.

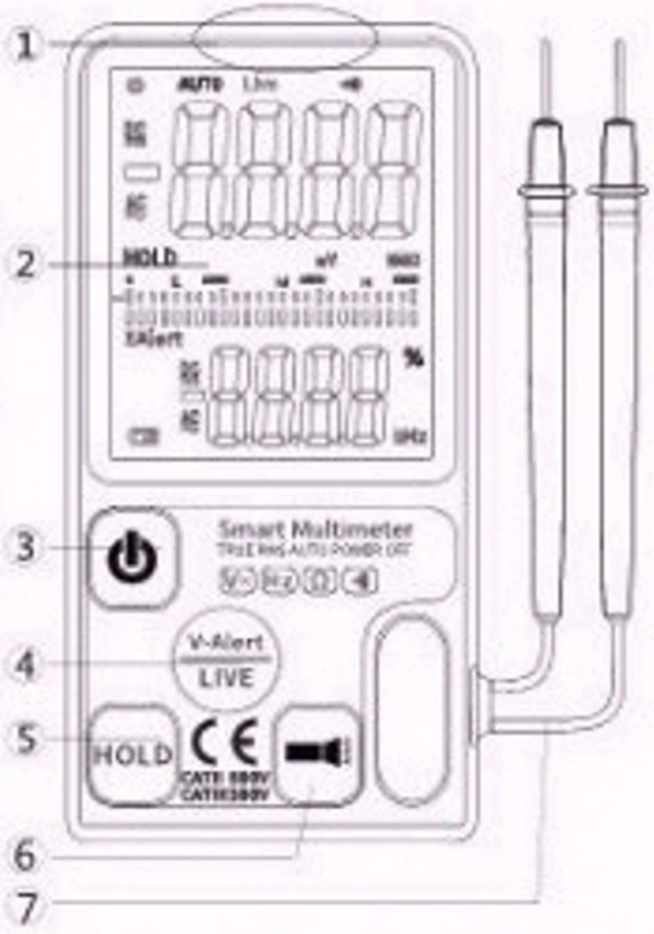
CE Matched EC(EU) standard.

⏚ Electrical grounding.

2. Product Description

1、Part Name

No.	Description
1	V~Alert sensor area
2	LCD Screen
3	Power switch
4	V-Alert or Live Wire Check
5	Data hold
6	Flashlight switch
7	Test leads



2、Key Description

V~Alert/Live: Automatic recognition mode, non-contact voltage sensing mode, Live wire check mode switching.

Flashlight: Back light switch.

HOLD: Freeze the reading on the screen.

⏻ : Power switch.

3、LCD full display symbol



Symbol	Elaborate on
AC	AC voltage
DC	DC voltage
(battery symbol)	Battery is low and should be changed
•)))	Continuity
AUTO	Automatic range measurement mode
(power symbol)	Auto power off function indication
HOLD	Data hold
mV,V	Voltage unit: millivolt, volt
Ω, kMΩ	Resistance unit: Ohm, Gigaohm
V~Alert	Non-contact voltage detection/NCV
Live	Live wire check mode
L,M,H	Low range,Mid-range,High-range

3. Specification

Automatic measuring range.
Full measuring range overload protection.
Maximum voltage allowed at the measuring end. : 600V DC or 600AC(RMS).
Work height: maximum 2000m
Display : LCD.
Maximum display value: 5999 digits.
Polarity indication : Self-indicating, '-' means Negative polarity.
Over-range display : 'OL' or '-OL' .
Sampling time : The meter figures show about 0.4 seconds
Unit display : Function and battery unit display.
Automatic Power off time: 3 minutes
Operational power : 1.5Vx2 AAA battery.
Battery low voltage indication: LCD display ▭ symbol.
Temperature coefficient : Less than 0.1 x Accuracy / ℃
Operational temperature and humidity : 0 ~ 40 ℃/32 ~ 104℉、45%-80%RH
Storage temperature and humidity : -10 ~ 60 ℃/-4 ~ 140℉、45%-80%RH
Boundary dimension : 136×67×12mm
Weight: ~110g

Technical index

Accuracy
Accuracy applies within one year of calibration.
Reference conditions: environmental temperature 18 ℃ to 28 ℃, relative humidity is not greater than 80.

1. Voltage DC

Range	Resolution	Accuracy
600V	0.1V	±(0.8%+3counts)

Sensitivity: minimum 0.5V DC voltage
Input impedance: 1MΩ
Maximum input voltage : 600V DC&AC (RMS)

2. Voltage AC

Range	Resolution	Accuracy
600V	0.1V	±(1.2%+5counts)

Sensitivity: minimum 0.5V DC voltage
Input impedance: 1MΩ
Maximum input voltage : 600V DC&AC （RMS）
Frequency range: 50Hz~60Hz, true RMS response.

3. Resistance

Range	Resolution	Accuracy
6000Ω	1Ω	±(1.2% +3counts)

Overload protection : 600V DC or AC（RMS）

4. Frequency

Range	Resolution	Accuracy
1000Hz	1Hz	±(1.0%+5counts)

Frequency range: 40Hz~1000Hz.

5. Measure Continuity

Function	Accuracy
•)))	If the resistance is <30Ω, the continuity beeper sounds.

Overload protection : 6000V DC or AC（RMS）

6. V~Alert

Range	Explanation
Low range	The bar value is displayed in the L area. The buzzer sounds a slow alarm.
Mid-range	The bar value is displayed in the M area. The buzzer sounds a quick alarm.
High-range	The bar value is displayed in the H area. The buzzer sounds a very loud alarm.

4. Operation Instructions

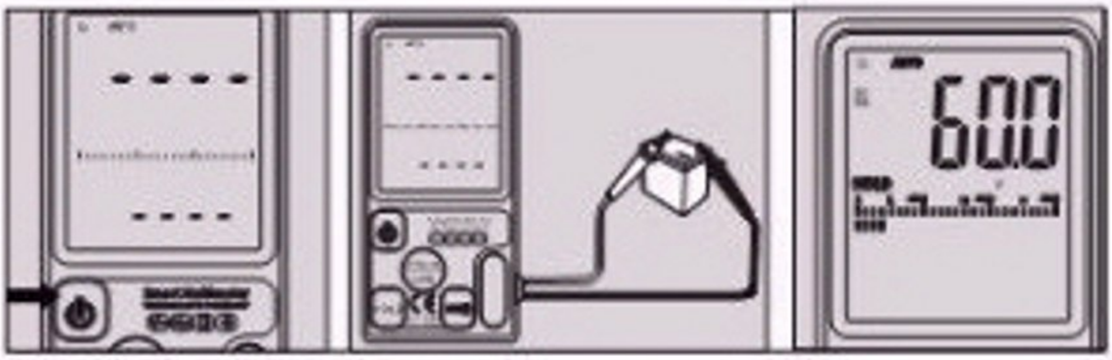
1. Voltage DC or AC/Frequency/Resistance/Measure Continuity

1. Presss the power button, the default mode is AUTO mode.
2. Connect the test leads in parallel to the circuit, power supply, or tested resistor. The meter automatically Identify whether it is AC voltage, DC voltage or resistance, and shows the frequency on the screen.
3. The built-in buzzer sounds if the tested resistance less than 30Ω.
4. Read the test results from the screen and view the dynamic changes of the values through the analog bar.

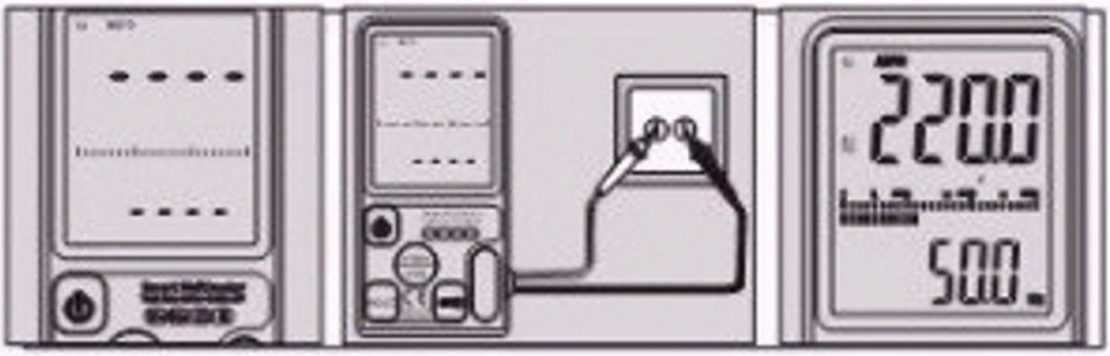
Warning:

- Do not input voltages higher than 600V and currents greater than 200mA, showing higher voltage andCurrent values are possible, but it may destory the meter.
- When measuring high voltage, be careful to avoid electric shock.
- Disconnect the test leads from the circuit when completed measurement.

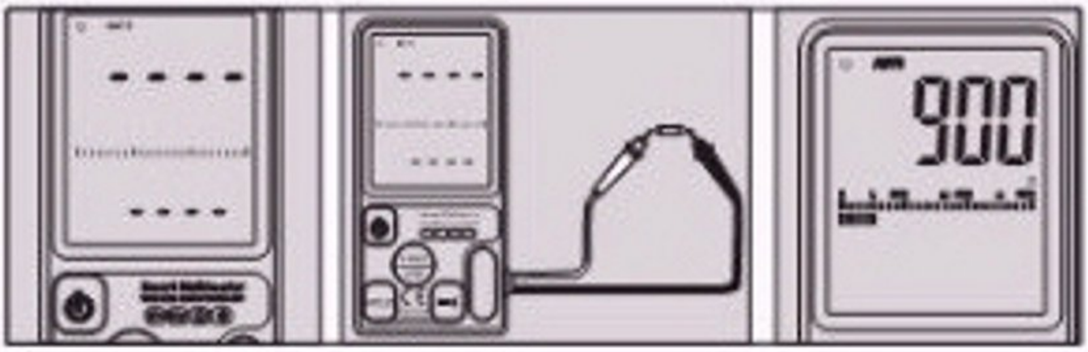
Voltage DC



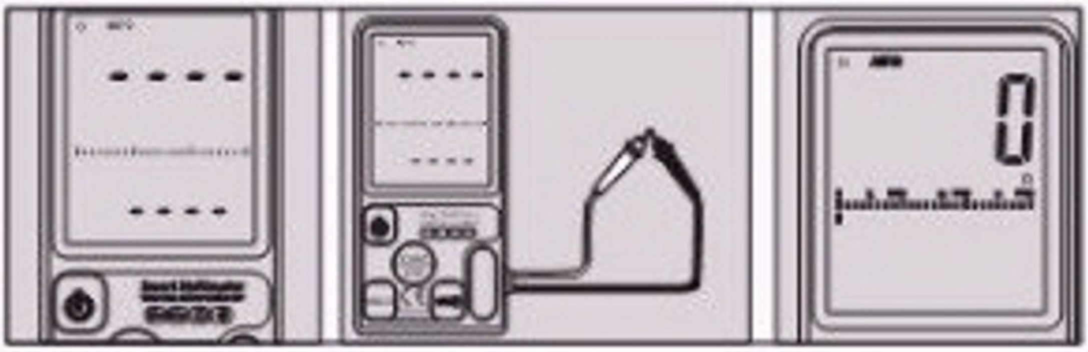
Voltage AC   Frequency



Resistance



Measure Continuity



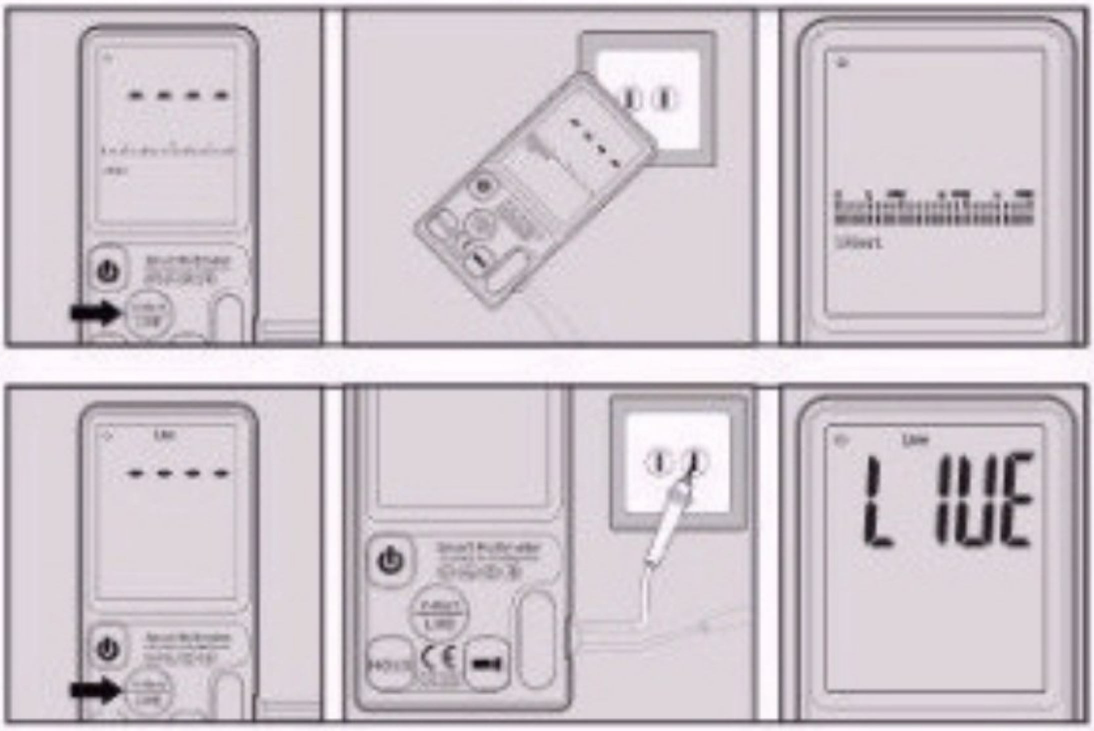
2. V~Alert or Live wire check

1. Press the power button.
2. Press V~Alert/LIVE button, switching to voltage detection mode. The screen displays V~Alert.
3. Close the non-contact voltage sensor of the meter to (less than 5mm) the live line of the AC voltage. The value bar of the meter screen lights up. The bar value shows L (low range), M (mid-range), H (high-range) according to the detected voltage strength. The higher the detected voltage strength, the higher the alarm sound frequency of the buzzer.
4. Press the V~Alert/LIVE button, switching to the Live Check mode and the screen displays Live.
5. Insert any test probe into the socket jack, If the meter detects AC voltage, The screen will display LIVE, and the buzzer will sound an alarm indicating that the line is a live wire.

Warning:

- Non-contact AC voltage and live wire detection operations may be influenced by the socket design, insulation thickness and class. Even without indication, the voltage may still exist. Do not use non-contact voltage detector to determine whether the voltage existance.
- When input voltage, the non-contact voltage sensing indicator may light on because of the existance of induced voltage
- Outside environment (such as flash, motor, etc.) may influence the non-contact voltage detection.

V~Alert or Live wire check



5. Maintenance

⚠ Warning

To avoid shock hazard,users should remove pen from the testing circuit before opening the battery cover of the meter.

1.Replace Battery

1) If "" symbol appears, it means the battery shall be replaced.
2) Turn off the instrument power
3) Use a screwdriver to remove the screw.
4) Replace the batteries with new batteries.
5) Mount the case.

Note:
Do not violate the battery polarity.